A Modified Ant Colony Algorithm For Evolutionary Design Of Digital Circuits

Mostafa Abd-El-Barr Sait, S.M. Sarif, B.A.B. Uthman Al-Saiari; Comput. Eng. Dept., KFUPM, Dhahran, Saudi Arabia;

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King Fahd University of Petroleum & Minerals

http://www.kfupm.edu.sa

Summary

Evolutionary computation presents a new paradigm shift in hardware design and synthesis. According to this paradigm, hardware design is pursued by deriving inspiration from biological organisms. The new paradigm is expected to radically change the synthesis procedures in a way that can help discovering novel designs and/or more efficient circuits. In this paper, a multiobjective optimization of logic circuits based on a modified ant colony (ACO) algorithm is presented. The performance of the proposed algorithm is evaluated using a set of randomly generated circuits. The results obtained using the proposed algorithm are compared to those obtained using existing ACO-based techniques. It is shown that the designed circuits using the proposed algorithm outperform those of the existing techniques.